

REMARKS

This is a full and timely response to the final Office Action (Paper No. 22) mailed by the U.S. Patent and Trademark Office on July 03, 2003. Claims 1-6, 10-14 and 29-36 are pending in the present application. Independent claims 1 and 10 have been amended. Dependent claims 8-9 have been amended to provide proper dependency and to provide proper antecedent basis for the term "conducting layer," which has been amended to "bus" layer. Applicants respectfully submit that support for the amendment to independent claims 1 and 10 can be found in the specification, at least on page 9, lines 6-15 and at least with respect to FIGS. 4A and 5C. Applicants submit that no new matter has been introduced. In view of the foregoing amendment and following remarks, reconsideration and allowance of the present application and claims are respectfully requested.

Rejections Under 35 U.S.C. §103

Claims 1-6, 8-14 and 29-36 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,920,080 to Jones, and further in view of U.S. Patent No. 5,414,403 to Greuter *et al.* In order for a claim to be properly rejected under 35 U.S.C. §103, the combined teachings of the prior art references must suggest all features of the claimed invention to one of ordinary skill in the art. See, e.g., *In Re Dow Chemical*, 837 F.2d 469, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 642 F.2d 413, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981). In addition, "[t]he PTO has the burden under section 103 to establish a prima facie case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988).

With regard to claim 1, the Office Action alleges that *Jones* discloses an organic light emitting device comprising an electrode (*Jones's* injection enhancement, which is not shown in the figures), a current self-limiting structure and an organic stack located between the electrode and the current self-limiting structure. The Office Action concedes that *Jones* fails to disclose that the current self-limiting structure comprises conducting regions dispersed in a non-conducting matrix. The Office Action continues stating that *Greuter et al.* teaches "a current self-limiting structure (see Fig 1) comprising conducting regions (filler 4, 5) dispersed in a non-conducting matrix (3, a matrix formed of polymer, lines 23-52 of column 3)." Office Action page 3. The Office Action continues stating "Greuter et al. further teach that this type of current self-limiting structure provides uniform switching capability and high-rated current-carrying capacity (lines 66 of Col. 1 - line 2 of Col. 2)." Office Action page 3. The Office Action further states that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to use current self-limiting structure, as disclosed by Greuter et al., in the device of Jones, in order to have uniform limiting or switching ability as well as high rated current carrying capacity."

Jones appears to disclose an organic light emitting device (OLED) structure that includes a substrate 100, a first conductor 200, a layer of organic material 300, a second conductor 250, a microcavity stack 400, and a top cover 500. (See column 6, lines 8-20). The microcavity stack 400 restricts light emissions in directions parallel to the planar substrate 100 and provides increased light emissions toward the viewer. The microcavity stack 400 minimizes the channeling of light in the organic material 300. The microcavity stack 400 also directs upward, light which has been emitted in a near Lambertian manner. The microcavity stack 400 reduces the activation of neighboring pixels, and increases contrast and color purity. The microcavity stack 400 is located over the organic material 300. (See column 6, lines 21-33).

Further, as mentioned in the previous response dated March 20, 2001, *Jones* mentions in the Background of the Invention section that "[e]dge shorting between the cathode and anode layers is another problem affecting most conventional OLED devices. Edge shorting reduces the illumination potential of the display. Edge shorting is the channeling of light within the organic layers. As a result of the channeling, light is not directed towards the viewer." However, nowhere does *Jones* disclose, teach or suggest that it would be desirable to have a structure between a conductor and the organic stack that limits the flow of current in the vicinity of an electrical short. Indeed, other than a brief mention of edge shorting in the Background of the Invention section and a brief mention of restricting light emission in directions parallel to the planar substrate in the Summary of the Invention section, nowhere does *Jones* disclose, teach or suggest the desirability, much less any structure or method, of limiting the flow of current in the vicinity of a short in an OLED device.

Greuter et al. appears to disclose a current limiting component that requires the use of two different resistance sub-bodies, each comprising a different resistance material. For example, a first resistance sub-body 4 comprising a first resistance material is combined with a second resistance sub-body 5 comprising a second resistance material. The first and second resistance sub-bodies 4 and 5 are respectively illustrated in FIG 2. of *Greuter et al.* arranged in a planar form, where the separate resistance materials are formed into "plates" that are arranged side-by-side to form resistance body 3. According to *Greuter et al.*, "the resistance body 3 is made up of two or more two-dimensional resistance sub-bodies 4, 5 preferably formed in each case as a plate." *Greuter et al.*, col. 4, lines 53-56. "In the normal operation of the current-limiting component, the resistance sub-bodies 5 have a resistance which is a plurality of times higher than the resistance of sub-bodies 4." *Greuter et al.* col. 4, lines 58-61. The plates are placed side-by-side which "results in a stack in which layers composed of the two different resistance materials are disposed alternately one after the other in

accordance with a multi layer arrangement." *Greuter et al.* col. 5, lines 13-15. Furthermore, in FIG 4, *Greuter et al.* shows that "the resistance sub-bodies 5 formed from the second resistance material may project beyond the resistance sub-bodies 4 in rib fashion. The projecting parts of the resistance sub-body 5 then act as cooling ribs and effect a particularly good dissipation of the heat generated in the resistance sub-bodies 4. *Greuter et al.* col. 5, lines 27-31.

Indeed, the current limiting component disclosed by *Greuter et al.* appears to require multiple layers of at least two different resistance materials sandwiched to form a resistance body 3 comprised of at least two different resistance materials.

In marked contrast to the proposed combination of *Jones and Greuter et al.*, amended independent claim 1 includes "a transparent current self-limiting structure comprising an anisotropic film, said current self-limiting structure comprising conducting regions, said conducting regions comprising a unitary material dispersed in a non-conducting matrix, said current self-limiting structure located between said electrode and a bus layer," and "an organic stack located adjacent said electrode and separated from said current self-limiting structure by said electrode." Applicants respectively submit that the proposed combination fails to disclose, teach or suggest the above features included in amended independent claim 1.

Similarly, amended independent claim 10 includes "incorporating a transparent current self-limiting structure comprising an anisotropic film, said current self-limiting structure comprising conducting regions, said conducting regions comprising a unitary material dispersed in a non-conducting matrix within said organic light emitting device, said current self-limiting structure residing between an electrode and a bus layer, and wherein said current self-limiting is separated from said organic stack by said electrode."

Accordingly, Applicants respectfully submit that independent claims 1 and 10 are allowable in that they recite features and steps that are neither disclosed, taught nor suggested by the proposed combination of *Jones* and *Greuter et al.* Furthermore, Applicants respectfully submit that dependent claims 2-6, 8, 9, 11-14 and 29-36 are allowable for at least the reason that they depend either directly or indirectly from allowable independent claims. *In re Fine, supra.*

No Motivation to Combine *Jones* and *Greuter et al.*

Applicants respectfully submit that there is no motivation to combine *Jones* with *Greuter et al.* to arrive at the present invention. "Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Under section 103, teachings of references can be combined only if there is some suggestion or incentive to do so." *ACS Hospital Systems, Inc., v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). Further, "[t]here must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination." *In re Oetiker*, 977 F.2d 1443, 1447, 24 USPQ2d 1443 (Fed. Cir. 1992).

In the case of *In re Sang-Su Lee*, 277 F.3d 1338, 61 USPQ2d 1430 (Fed Cir. 2002), the United States Court of Appeals for the Federal Circuit, reviewing an obviousness rejection by a Patent Examiner that was upheld by the Board of Patent Appeals and Interferences, stated:

[t]he "common knowledge and common sense" on which the Board relied in rejecting *Lee's* application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. Conclusory statements such as those here provided do not fulfill the agency's obligation....

....

...The patent examiner and the Board are deemed to have experience in the field of the invention; however, this experience, insofar as applied to the determination of patentability, must be applied from the viewpoint of "the person having ordinary skill in the art to which said subject matter pertains," the words of section 103.

In finding the relevant facts, in assessing the significance of the prior art, and in making the ultimate determination of the issue of obviousness, the examiner and the Board are presumed to act from this viewpoint. Thus, when they rely on what they assert to be general knowledge to negate patentability, that knowledge must be articulated and placed on the record. The failure to do so is not consistent with either effective administrative procedure or effective judicial review. The board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.

In Re Sang-Su Lee, 277 F.3d 1338 at 1345.

The Office Action fails to state a prima facie case of obviousness and fails to articulate a clear motivation to make the proposed combination.

Specifically, Applicants respectfully submit that the Office Action fails to establish a prima facie case of obviousness because the Office Action has not pointed out the specific teachings in *Jones* and *Greuter et al.* that would motivate one having ordinary skill in the art to combine the references to arrive at Applicants' invention. Indeed, neither *Jones* nor *Greuter et al.* disclose, teach or suggest at least a transparent current self-limiting structure comprising an anisotropic film, the current self-limiting structure comprising conducting regions, said conducting regions comprising a unitary material dispersed in a non-conducting matrix, said current self-limiting structure located between said electrode and a bus layer.

As mentioned above, the current limiting component disclosed by *Greuter et al.* requires the use of two different sub-bodies, each having a different resistance material. Further, in the preferred embodiment disclosed by *Greuter et al.* the two different resistance materials are separately formed into plates and then placed in a side-by-side orientation before being assembled into a conventional resistor. Further, *Jones* fails to disclose, teach or suggest

the desirability of having any type of current limiting structure whatsoever in a semiconductor-based light emitting device. Accordingly, neither *Jones* nor *Greuter et al.* provide any motivation to combine the teachings to arrive at Applicants' claimed invention.

Further, Applicants respectfully disagree with the conclusory statement in the Office

Action that:

it would have been obvious to one having ordinary skill in the art at the time the invention was made to use current self-limiting structure, as disclosed by *Greuter et al.*, in the device of *Jones*, in order to have uniform limiting or switching ability as well as high rated current carrying capacity.

Applicants respectfully submit that there is no motivation to combine *Jones* and *Grueter et al.* at least because *Jones* is drawn to semiconductor based organic light emitting device, while the technology disclosed in *Greuter et al.* is applicable to a conventional axial resistor element. Applicants respectfully submit that one having ordinary skill in the art would not be motivated to combine the two references to arrive at Applicant's invention. Specifically, Applicants respectfully submit that one having ordinary skill in the art of semiconductor based organic light emitting devices would not be lead to modify such a device with a multiple-plate current-limiting component designed for use in an axial resistor such as that disclosed by *Grueter et al.*

For at least the reasons stated above, Applicants respectfully submit that the proposed combination *Jones* and *Greuter et al.* is improper, and further, that the proposed combination of *Jones* and *Greuter et al.* fails to disclose, teach or suggest the transparent current self-limiting structure of the invention.


CONCLUSION

For at least the foregoing reasons, Applicants respectfully request that all outstanding rejections be withdrawn and that all pending claims of this application be allowed to issue. If the Examiner has any comments regarding Applicants' response or intends to dispose of this matter in a manner other than a notice of allowance, Applicants request that the Examiner telephone Applicants' undersigned attorney.

Respectfully submitted,

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